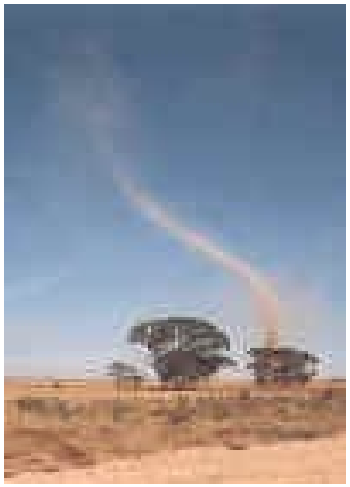
Tornadoes

Defined as a violently rotating column of air extending from a thunderstorm to the ground.

- **Occur in many parts of the world**
- **Found most frequently in the United States east of the Rocky Mountains**
- **Most frequent during the spring and summer months.**
- **An average of 800 tornadoes are reported nationwide each year**
- **80 deaths and over 1,500 injuries average per year.**
- **Capable of tremendous destruction with wind speeds of 250 mph or more**

Tornado Variations



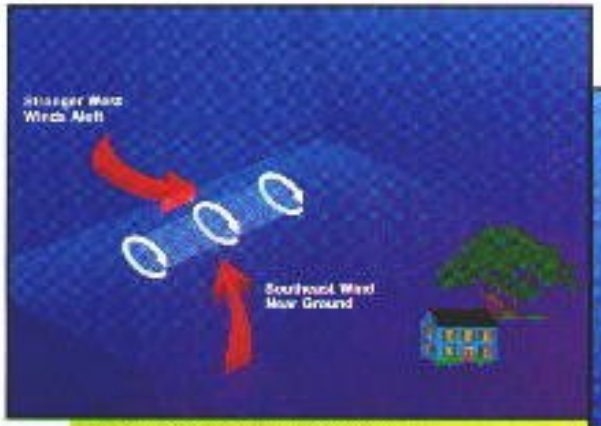
- Some tornadoes may form during the early stages of rapidly developing thunderstorms.
- Occasionally, two or more tornadoes may occur at the same

- Tornadoes may appear nearly transparent until dust and debris are picked

- Waterspouts are weak tornadoes that form over warm water.

How Do Tornadoes Form?

Before thunderstorms develop, a change in wind direction and an increase in wind speed with increasing height creates an invisible, horizontal spinning effect in the lower atmosphere.



Rising air within the thunderstorm updraft tilts the rotating air from horizontal to vertical.

An area of rotation, 2-6 miles wide, now extends through much of the storm. Most strong and violent tornadoes form within this area of strong rotation.

Tornado Clues

Look out for:

- Dark, often greenish sky
- Wall cloud
- Large hail
- Loud roar; similar to a freight train

A lower cloud base in the center of the photograph identifies an area of rotation known as a rotating **wall cloud**. This area is often nearly rain-free. Note rain

Moments later a strong tornado develops in this area. Softball-size hail and damaging "straight-line" winds can occur with this

How Tornadoes Hide

- Tornadoes hide in many ways -- under cover of darkness, heavy rain, landscape.
- They usually develop in areas in which a severe thunderstorm watch or warning is in effect. Remain alert to signs of an approaching tornado and seek shelter if threatening conditions exist

Tornado Myths

MYTH: Areas near rivers, lakes, and mountains are safe from tornadoes.

FACT: No place is safe from tornadoes. In the late 1980's, a tornado swept through Yellowstone National Park leaving a path of destruction up and down a 10,000 ft. mountain.

MYTH: The low pressure with a tornado causes buildings to "explode" as the tornado passes overhead.

FACT: Violent winds and debris slamming into buildings cause most structural

Tornado Safety

- In a home or building, move to a pre-designated shelter, such as a basement.
- Stay away from windows
- If an underground shelter is not available, move to an interior room or hallway on the lowest floor and

Interior bathroom was all that was left standing of this hou

- Mobile homes, even if tied down, offer little protection from tornadoes and should be abandoned.

Tornado Safety

Damage in tornado stricken Northeastern Georgia.
Photo by Andrea Booher/FEMA

- Get out of automobiles.
- Do not try to outrun a tornado in your car. **LEAVE IT IMMEDIATELY!**

Tornado Safety at Work

- **Go to an inside hallway at the lowest level (central 1st floor hallway).**
  - **Stay inside**
  - **Go to the lowest and center most part of the building.**
  - **Avoid places with wide-span roofs areas**

- **Move away from exterior walls and windows**
- **Get under a piece of sturdy furniture such as a cubicle work surface or heavy table or desk and hold on to it. (Several of the people that survived the Jarrell tornado lived because they got into a bathtub).**
- **Use arms to protect head and neck.**